EMC²

Fibre Channel FC4700 Array to IP4700 File Server

Conversion Guide

P/N 014003051-00

This document explains how to convert a Model FC4700 storage system to a Model IP4700 file server by replacing and initializing the storage processors (SPs), loading IP4700 software, and completing a Factory Initialization procedure.

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Only authorized EMC service providers should perform the procedure described in this document.

CAUTION

This procedure DOES NOT support the transfer or migration of data from an FC4700 system to an IP4700 file server.

Requirements

The IP4700 file server supports twisted-pair CAT5 copper Ethernet and/or optical Ethernet cables.

- The Disk Processor Enclosure (DPE) must have:
  - Two power supplies (part number 005047159), and
  - Two standby power supplies (SPSs)
- Each Disk-Array Enclosure (DAE) must have:
  - two Link Control Cards (LCCs), and
  - two power supplies
- Interconnection of DAEs must conform to IP4700 rules
- LAN infrastructure must conform to IP4700 requirements for 10/100 - Gbit (1000FD)
- The system must include a management station to support CLARalert®/IP
- The conversion process requires a service laptop computer with Windows NT® 4.0 with SP 6A, HyperTerminal, IE 5.0, and a null modem cable

IP4700 Disk Rules

The following rules define IP4700 disk drive configurations:

Table 1 Supported Disks in DPE and DAEs

Vendor	Disk (P/N)	Description
Seagate	005045272	18-Gbyte, 10K rpm
	005045932	18-Gbyte, 10K rpm
	005046730	18-Gbyte, 10K rpm
	005046734	18-Gbyte, 15K rpm
	005045936	36-Gbyte, 10K rpm
	005046732	36-Gbyte, 10K rpm
	005046734	73-Gbyte, 10K rpm

- *You cannot mix disk sizes or spindle speeds within IP4700 system shelves*. That is, each shelf in an IP4700 or attached DAE must consist of identical size disks. All disks within a shelf must also run at the same spindle speed.
- The DPE must contain 10 disks (of the same size and speed). The IP4700 DPE is bound as a RAID 5 array with eight data drives, one parity drive and one hot spare.
- The array MUST have a Hot Spare for the largest RAID 5 protected drive in the array
  - The hot spare in the DPE will stand in for any RAID group.
  - The hot spare must be of equal or larger size than any other single drive in the configuration.
  - The DPE hot spare cannot be upgraded to a larger size
- Each DAE in an IP4700 system can contain:
  - 5 disks, bound as 4+1 data/parity drives
  - 6 disks, bound as 4+1, +1 hot spare drive
  - 10 disks, bound as 2 sets of 4+1 drives
  - 10 disks, bound as 1 set of 8+1+ hot spare drive

    Per the first disk rule, you cannot mix 10K and 15K rpm, or 18-Gbyte, 36-Gbyte and 73-Gbyte drives in the same shelf.

Conversion Kit(s)

The FC4700-to-IP4700 with Quad LAN Conversion Kit (FC-IP4700F) contains the following:

- IP4700 Storage Processor (qty: 2) P/N 005046657
- IP4700 Seed Disk P/N 005047310
- IP4700 Accessory Kit P/N 005047044
- Conversion documentation P/N 005047152

The FC4700-to-IP4700 with Gbit LAN Conversion Kit, (FC-IP4700G), contains the following:

- IP4700 Storage Processor (qty: 2) P/N 005047012
- IP4700 Seed Disk P/N 005047310
- IP4700 Accessory Kit P/N 005047044
- Conversion documentation P/N 005047152

Related Documentation

I*P4700 Quick Start Guide* (069701170)

IP4700 Installation Checklist (CLAR-PSP-002, Rev. C)

IP4700 Administrator's Guide (069701169)

IP4700 Installation and Service Guide (014003002)

Fibre Channel Rails and Tray for Fibre Channel Enclosures Installation Guide (014002613)

Non-EMC Cabinet Mounting Hardware for Fibre Channel Enclosures and Switches Installation Guide (014003029)

Mounting CLARiiON Arrays in Non-EMC Supplied Racks (CLAR-PSB-013)

CLARalert/IP Installation Checklist (CLAR-PSP-003, Rev. C)

EMC Email Installation Checklist (CLAR-PSP-004, Rev. B)

EMC CLARalert/IP Release Notes (085600442)

CLARalert/IP Install Guide (069701171)

Converting the Hardware

CAUTION

The following procedure assumes that you have appropriately backed up or moved to another storage system any data you want to preserve. Once you begin the conversion procedure, you CANNOT RECOVER ANY DATA from the FC4700 storage system!

In addition to this guide, you will need the instructions in the *IP4700 Quick Start Guide*, and the *IP4700 Installation and Service Guide*. Locate those documents and have them available before you begin the conversion procedure.

To convert your hardware from an FC4700 to an IP4700, follow these steps.

Exchange Storage Processors and System Drives

1. Power down the system as described in Chapter 2 of the *IP4700 Installation and Service Guide*
2. Reconfigure the rack components (if required):
   a. Remove Fibre Channel switches (the IP4700 does not support Fibre Channel switches).
   b. Reposition DPE/DAEs as required. Set your DAE IDs in sequential order. Refer to your DAE documentation and the description of Addressing Requirements in Chapter 2 of the *IP4700 Installation and Service Guide*.
   c. Position disks in the enclosures to meet the disk rules and requirements listed on page 3.

Exchange the FC4700 and IP4700 Storage Processors

3. Remove the FC4700 storage processors, following the procedures in Chapter 3 of the *IP4700 Installation and Service Guide*.
4. Install the IP4700 storage processors as described in the *IP4700 Installation and Service Guide.*
5. Pack the FC4700 storage processors in the IP4700 boxes.
6. Return the two FC4700 storage processors to the appropriate crediting facility.

Move the FC4700 System Drives to Data-Only Locations

7. Ensure that the DPE is configured with 10 disks of the same size and speed. Supported disks and configurations are listed on page 3 of this document.
8. Move disks 0, 1, and 2 in the DPE to positions in slots 3-9. For example, exchange disk 0 with disk 9, disk 1 with disk 8, and disk 2 with disk 7.

   If necessary, refer to chapter 3 in the *IP4700 Installation and Service Guide* for instructions on removing and installing disk drives.

Permanent FC4700 information in "system" disks 0-2 will prevent IP4700 powerup if the disks remain in (or are returned to) DPE slots 0, 1, or 2.

Verify Cabling

9. Refer to the *IP4700 Quick Start Guide* and the *IP4700 Installation and Service Guide* to ensure that the system is properly cabled for the IP4700. Figure 1 shows a sample configuration, with three DAEs above the IP4700 DPE.

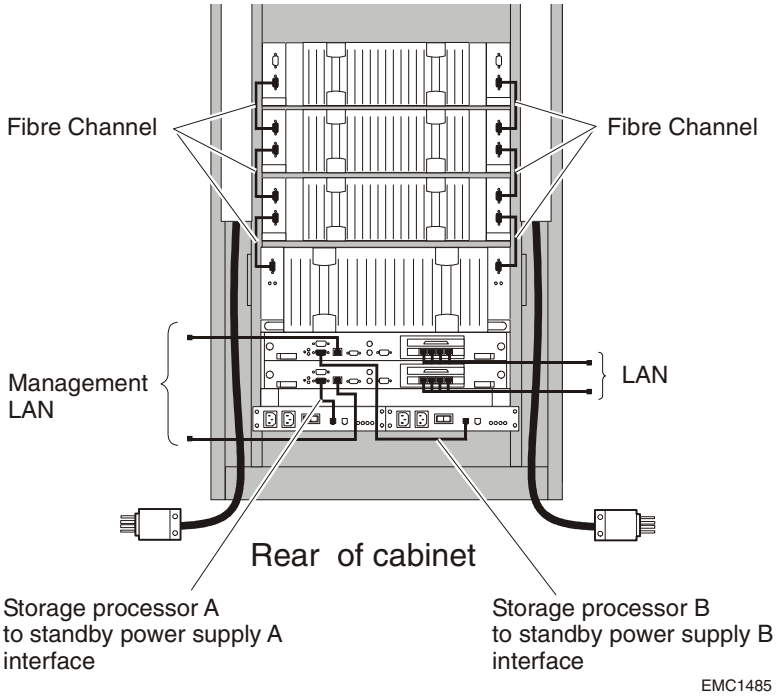

Figure 1 Example IP4700 Configuration - Three DAEs

Loading IP4700 Software

The steps in this section guide you through the firmware/software loading process. They begin with verifying and, if necessary, flashing new firmware to each storage processor. You must *follow the remaining steps in the exact order* listed. They describe how to load an IP4700 software image from the hard drive in your conversion kit ("seed disk") to the system.

Locate the IP4700 seed disk (P/N 005047310) in your conversion kit and have it available before you begin this procedure.

1. Connect a Windows® console to SP A through the serial port, as shown in Step 3 of the *IP4700 Quick Start Guide*.
2. Start a HyperTerminal session.
3. If necessary, turn on ac cabinet power to the side that powers SPS A, then to the side that powers SPS B. Turn the SPS A power switch to the on position, then do the same for SPS B.

   Since the current 0, 1, and 2 drives do not contain a loadable image, the autoboot will fail. The following screen displays the error.

```
EndTime: 3/16/2001 14:27:06 DiagName: PROM Kernel

AutoBoot Enabled! ByPass Auto Booting ([N], Y)? [0]

  Starting loop initialization
  Loop is initialized.
No valid image exists.

Unable to load image.
ErrorTime: 3/16/2001 14:27:16 ErrorCode: 1012
  ErrorDesc: Autoboot fails loading flare image from fibre disks.
  EndError


FS > _
```

Wait for the system to display the `FS >` prompt before continuing with Step 4.

If necessary, refer to chapter 3 in the *IP4700 Installation and Service Guide* for instructions on removing and installing disk drives.

4. Remove the disk drive installed in DPE slot 0 (the leftmost slot) and set it aside.

Note that the disks in DPE slots 0-2 should NOT be the 0-2 disks in the previous FC4700 configuration (per step 8 in the preceding section, "Converting the Hardware").

5. Install the seed disk (P/N 005047310) into DPE slot 0. *Wait until the LED is on solid before continuing with the next ste*p.
6. At the `FS >` prompt, type **finit** and then press **<Enter>**.

```
FS > finit ↵
  Starting loop initialization
  Loop is initialized.
```

7. At the `FS >` prompt, type **showrev** and then press **<Enter>**. Minimum revisions of PROM and BIOS are displayed below.

```
FS > showrev ↵
  Prom Version: 03:05:97
  Bios Version: 4.06 v01.22
```

If the PROM and BIOS versions are at or above the minimum listed above, proceed to step 8.

If the PROM and/or BIOS versions are below the minimum listed above, perform the following:

`FS>` **engrmode on** ↵

`FS>` **dsktofl 0** ↵ (to flash firmware from disk 0 to the SP)

`FS>` **dsktofl b 0** ↵ (to flash BIOS from disk 0 to the SP)

`FS>` **engrmode off** ↵

8. Move the serial cable to SP B.

9. Repeat step 7 for the second SP, upgrading PROM or BIOS if necessary.

If you did not upgrade PROM or BIOS in the preceding steps, continue with step 10.

If you did upgrade PROM or BIOS on either storage processor, you need to power cycle the system to complete the firmware upgrade:

a. Remove the seed disk and replace it with the disk drive you removed previously in Step 4.

b. Move the serial cable to SP A.

c. power cycle the DPE as described in Chapter 2 of the *IP4700 Installation and Service Guide*:

- Turn the power switches on the Standby Power Supplies to the off position.
- Wait for all LED activity on the DPE to cease, and for the fans to stop running.
- Turn the power switch on SPS A to the on position, then do the same for SPS B.

The autoboot will fail again. Wait for the system to display the `FS >` prompt before continuing with Step d.

d. Remove the disk drive installed in DPE slot 0 and set it aside.

e. Install the seed disk (P/N 005047310) into DPE slot 0.

10. At the `FS >` prompt, type **finit** and then press **<Enter>**.

```
FS > finit ↵
  Starting loop initialization
  Loop is initialized.
```

CAUTION

Failure to copy the image in the correct sequence will result in an unrecoverable condition.

The conversion hard disk that contains your IP4700 software is not write-protected. *Take care to enter the dsktodsk commands correctly and avoid overwriting the seed disk.*

11. At the `FS >` prompt, type **dsktodsk 0,1** and then press **<Enter>**. This copies the image from the seed disk (0) to disk 1 in approximately ten seconds.

```
FS > dsktodsk 0,1 ↵
Installing image from disk 0 to disk 1.......
.............................................
.............................................
.............................................
```

12. At the `FS >` prompt, type **dsktodsk 0,2** and then press **<Enter>**. This copies the image from the seed disk (0) to disk 2 in approximately ten seconds.

```
FS > dsktodsk 0,2 ↵
Installing image from disk 0 to disk 2.......
.............................................
.............................................
.............................................
```

13. Remove the seed disk from DPE slot 0, and replace it with the drive you removed in step 4.
14. Wait for the disk LEDs to stop flashing and remain on solid, indicating that the disk is up and ready.
15. At the `FS >` prompt, type **finit** and then press **<Enter>**.

```
FS > finit ↵
  Starting loop initialization
  Loop is initialized.
```

16. At the `FS >` prompt, type **dsktodsk 2,0** and then press **<Enter>**. This copies the image from disk 2 to disk 0 in approximately ten seconds.

```
FS > dsktodsk 2,0↵
Installing image from disk 2 to disk 0.......
.............................................
.............................................
.............................................
```

Note: If you see the error message: `disk 2 not on the loop,` ensure that the disk 2 LED is on solid and repeat Step 15 before trying again.

To finish the FC4700-to-IP4700 conversion, you must clear (*zero*) all the disks in the system of previous data, and complete the IP4700 factory initialization process. The next section in this guide describes the zero disk and factory initialization procedures.

Factory Initialization

Factory initialization is a process that all new IP4700 systems experience prior to shipment. The process begins by clearing all data from the DPE and DAE(s) in the IP4700 system, and then binds the disks into file server volumes. You must follow this same process to complete the FC4700-to-IP4700 conversion, and leave your system ready for the network initialization process common to all IP4700 file servers.

1. Locate the DPE serial number label on the back of the unit. Copy the number here – _____.
   You will need it later in the procedure.
2. Verify that the **yellow** SPS LEDs are off and the **green** LEDs are either on or flashing.
3. power cycle the DPE as described in Chapter 2 of the *IP4700 Installation and Service Guide*:
   a. Turn the power switches on the Standby Power Supplies to the off position.
   b. Wait for all LED activity on the DPE to cease, and for the fans to stop running. (Note that if the SPS was in the ready state it will hold power for 90 seconds.)
   c. Wait an additional 30 seconds.
   d. Turn on the power switch on SPS A, then do the same for SPS B.
4. Enter **^V** (CTRL-V) *immediately* when the system displays the IP4700 banner.

```
  @@@@@@  @@@@@      @@@   @@@@@@    @@       @@
    @@    @@  @@    @ @@   @@  @@   @  @     @  @
    @@    @@  @@   @  @@       @@  @@ @@  @@ @@
    @@    @@  @@  @   @@      @@   @@ @@  @@ @@
    @@    @@@@@  @@@@@@@     @@   @@ @@  @@ @@
    @@    @@          @@     @@    @  @    @  @
  @@@@@@  @@          @@     @@      @@      @@

Starting SP Components. Please Wait....
```

Once the IP4700 banner is displayed, you have a *maximum of 60 seconds* to enter **^V**.

Entering **^V** should cause the following to display immediately:

```
================================================

==== Enabling Factory Initialization Startup ====
================================================

Raid System Started Successfully......
```

If `Enabling Factory Initialization Startup` does not display, one of the following may occur:

– The system reboots and comes up to the IP4700 banner.

```
Starting SP Components. Please Wait.....
Raid System Started Successfully........
```

(the display will recycle)

– The system hangs.

In either case manually reset the SPs. Reset SP A first, then SP B. You can reset the SPs by power cycling the system, as described in step 3 on page 12.

5. Enter **^V** at the IP4700 banner.

```
  @@@@@@  @@@@@      @@@   @@@@@@    @@       @@
    @@    @@  @@    @ @@   @@  @@   @  @     @  @
    @@    @@  @@   @  @@       @@  @@  @@  @@  @@
    @@    @@  @@  @   @@      @@   @@  @@  @@  @@
    @@    @@@@@   @@@@@@@     @@   @@  @@  @@  @@
    @@    @@           @@     @@    @  @    @  @
  @@@@@@  @@           @@     @@      @@      @@

  Starting SP Components. Please Wait.....[].
    Raid System Started Successfully.....
```

6. When you see the Boot Console menu, type **2** at the `Enter Number of Your Choice:` field, and then press **<Enter>** to reach the fcli command line.

```
              Boot Console
           1.Perform Factory Initialization
           2. Access FCLI
           3. Recover Administrative State
           4. Recreate System Volumes
           5. Check File System on Volumes
           6. Authorized Service Personnel Only
           Q. Quit Boot Console.
        Enter Number Of Your Choice: 2 ↵

    FCLI Passthru Command Line. Type menu to return to menu interface.
fcli >
```

Verify System Status

7. At the `fcli >` prompt, type **ls** and then press **<Enter>**.

```
fcli >ls ↵
ls: There are no currently bound units
03/29/2001 10:30:14 GMT
fcli >
```

Note: If the display indicates bound LUNs, you have "stale data" on disk 0. Refer to the previous section, "Loading IP4700 Software," for instructions as you perform the following:

- Exchange disk 0 with another drive.
- (Make certain the new drive has never been in position 0, 1, or 2.)
- Power cycle the DPE.
- Copy the system image from disk 2 to disk 0.
- Begin again at Step 2 in this section.

8. At the `fcli>` prompt, type **spstat** and then press **<Enter>** as shown on page 16.

```
    FCLI Passthru Command Line. Type menu to return to menu interface.
fcli > spstat ↵

SP A  LOOP ID 0x7e (126.)
Microcode Revision: "@(#) IP4700 R1.1 p8.4

Statistics Logging: DISABLED          PEER SP: PRESENT
Disk Write Caching: DISABLED          R3 Write Buffering: DISABLED
WRITE CACHE: DISABLED                 READ CACHE: DISABLED
RAID OPTIMIZED: Mixed LUNs            SP TYPE: IP4700
LUN REMAPPING: DISABLED
A: DP 00TOTAL 0000 DIRTY 0000
B: TOTAL 0000
U: DP 00TOTAL 0000
Requests Complete: 19
SPS A: NR
SPS B: NR

Press any key to continue.... ↵
```

9. Examine the SPSTAT information carefully. Verify the following:
   - the PEER SP is PRESENT
   - the SPS units are in one of the following states: TE, NR, or OK.
10. Press **<Enter>** to go to the next screen

```
       slot:   0    1    2    3    4    5    6    7    8    9   PSA  PSB  FAN
  DPE1-state: UNB  UNB  UNB  UNB  UNB  UNB  UNB  UNB  UNB  UNB   OK   OK   OK   OK
 Unit/Group :  **   **   **   **   **   **   **   **   **   **
  DAE1-state: UNB  UNB  UNB  UNB  UNB  UNB  UNB  UNB  UNB  UNB
 Unit/Group :  **   **   **   **   **   **   **   **   **   **

03/16/2001 15:35:08 gmt
fcli> _
```

11. On the second screen of SPSTAT information, verify the following:
    - The system sees all the disk drives and they are unbound.
    - The system sees all power supplies and fan modules and they are OK.

NOTE: If you do not see the DAEs and disks you expect, verify that the Enclosure IDs and cabling are correct. If you need to change them, then you must reset both SPs. You can reset the SPs by powercycling the system, as described in step 3 on page 12.

12. At the `fcli>` prompt, type **clearlog** and then press **<Enter>**.

```
fcli > clearlog ↵
```

Zero Disk to Clear Drives

13. At the `fcli>` prompt, type **zd all** and then press **<Enter>**.

```
fcli> zd all ↵
Status recv'd opcode 0x8a status 0x0
```

The disk LEDs flash randomly on each shelf.

The zero disk function you just implemented enables the fast bind feature, and takes approximately 15 minutes. *Go to step 14 now while the command executes*.

14. At the `fcli>` prompt, t ype **spstat** and then press **<Enter>**. Verify that a `ZER` has replaced the `UNB`.

```
fcli > spstat ↵

SP A  LOOP ID 0x7e (126.)
Microcode Revision: "@(#) IP4700 R1.1 p8.4

Statistics Logging: DISABLED          PEER SP: PRESENT
Disk Write Caching: DISABLED          R3 Write Buffering: DISABLED
WRITE CACHE: DISABLED                 READ CACHE: DISABLED
RAID OPTIMIZED: Mixed LUNs            SP TYPE: IP4700
LUN REMAPPING: DISABLED
A: DP 00TOTAL 0000 DIRTY 0000
B: TOTAL 0000
U: DP 00TOTAL 0000
Requests Complete: 19
SPS A: OK
SPS B: OK

Press any key to continue.... ↵


       slot:  0   1   2   3   4   5   6   7   8   9  PSA PSB FAN
 DPE1-state: ZER ZER ZER ZER ZER ZER ZER ZER ZER ZER  OK  OK  OK  OK
Unit/Group :  **  **  **  **  **  **  **  **  **  **
 DAE1-state: ZER ZER ZER ZER ZER ZER ZER ZER ZER ZER
Unit/Group :  **  **  **  **  **  **  **  **  **  **
```

15. At the `fcli>` prompt, type **getlog** and then press **<Enter>**. Verify that the log reports a `Factory Zero Started` for each disk drive.

```
fcli> getlog ↵

    Event Date         CRU  Event  (Message)                Extended Status
 1. 03/16/01 15:48:16 0_0  0x6fa  (Factory Zero Started)         0x00
 2. 03/16/01 15:48:16 0_1  0x6fa  (Factory Zero Started)         0x00
 3. 03/16/01 15:48:16 0_2  0x6fa  (Factory Zero Started)         0x00
 4. 03/16/01 15:48:16 0_3  0x6fa  (Factory Zero Started)         0x00
 5. 03/16/01 15:48:16 0_4  0x6fa  (Factory Zero Started)         0x00
 6. 03/16/01 15:48:16 0_5  0x6fa  (Factory Zero Started)         0x00
 7. 03/16/01 15:48:16 0_6  0x6fa  (Factory Zero Started)         0x00
 8. 03/16/01 15:48:16 0_7  0x6fa  (Factory Zero Started)         0x00
 9. 03/16/01 15:48:16 0_8  0x6fa  (Factory Zero Started)         0x00
10. 03/16/01 15:48:16 0_9  0x6fa  (Factory Zero Started)         0x00
11. 03/16/01 15:48:16 1_0  0x6fa  (Factory Zero Started)         0x00
12. 03/16/01 15:48:16 1_1  0x6fa  (Factory Zero Started)         0x00
13. 03/16/01 15:48:16 1_2  0x6fa  (Factory Zero Started)         0x00
14. 03/16/01 15:48:16 1_3  0x6fa  (Factory Zero Started)         0x00
15. 03/16/01 15:48:16 1_4  0x6fa  (Factory Zero Started)         0x00
16. 03/16/01 15:48:16 1_5  0x6fa  (Factory Zero Started)         0x00
17. 03/16/01 15:48:16 1_6  0x6fa  (Factory Zero Started)         0x00
18. 03/16/01 15:48:16 1_7  0x6fa  (Factory Zero Started)         0x00
19. 03/16/01 15:48:16 1_8  0x6fa  (Factory Zero Started)         0x00

Press any key to continue... (or "q" to Quit) ↵
```

16. At the `fcli>` prompt, type **clearlog** and then press **<Enter>**.

```
fcli > clearlog ↵
```

17. Once **ALL** the disk LEDs have stopped flashing, type **getlog** at the `fcli>` prompt and then press **<Enter>**. Verify that all disks report successful completion of the zero disk operation.

NOTE: If disk drives in a DAE do not report starting factory zero, verify that both fibre loop cables are connected, as required by the internal code.

```
fcli> getlog ↵

   Event Date         CRU  Event  (Message)                  Extended Status
 0. 03/16/01 15:48:16 1_9  0x6fa  (Factory Zero Started)           0x00
 1. 03/16/01 15:57:18 0_9  0x6fc  (Factory Zero Completed)         0x00
 2. 03/16/01 15:57:18 1_2  0x6fc  (Factory Zero Completed)         0x00
 3. 03/16/01 15:57:19 1_1  0x6fc  (Factory Zero Completed)         0x00
 4. 03/16/01 15:57:57 1_0  0x6fc  (Factory Zero Completed)         0x00
 5. 03/16/01 15:57:57 1_5  0x6fc  (Factory Zero Completed)         0x00
 6. 03/16/01 15:57:57 1_3  0x6fc  (Factory Zero Completed)         0x00
 7. 03/16/01 15:57:57 1_9  0x6fc  (Factory Zero Completed)         0x00
 8. 03/16/01 15:57:57 1_4  0x6fc  (Factory Zero Completed)         0x00
 9. 03/16/01 15:57:57 1_8  0x6fc  (Factory Zero Completed)         0x00
10. 03/16/01 15:57:57 1_7  0x6fc  (Factory Zero Completed)         0x00
11. 03/16/01 15:58:01 1_6  0x6fc  (Factory Zero Completed)         0x00
12. 03/16/01 16:02:40 0_5  0x6fc  (Factory Zero Completed)         0x00
13. 03/16/01 16:02:40 0_6  0x6fc  (Factory Zero Completed)         0x00
14. 03/16/01 16:02:40 0_3  0x6fc  (Factory Zero Completed)         0x00
15. 03/16/01 16:02:40 0_4  0x6fc  (Factory Zero Completed)         0x00
16. 03/16/01 16:02:41 0_7  0x6fc  (Factory Zero Completed)         0x00
17. 03/16/01 16:02:41 0_8  0x6fc  (Factory Zero Completed)         0x00
18. 03/16/01 16:03:34 0_1  0x6fc  (Factory Zero Completed)         0x00
19. 03/16/01 16:03:34 1_8  0x6fc  (Factory Zero Completed)         0x00

 Press any key to continue... (or "q" to Quit) ↵
```

18. At the `fcli>` prompt, type **clearlog** and then press **<Enter>**.

```
fcli > clearlog ↵
```

Load DPE Chassis Serial Number

19. At the `fcli>` prompt, type **setser** ***serial number*** and then press **<Enter>**.

    In the *serial number* field, enter the last 12 characters, beginning with **F**, of the DPE Chassis Serial Number you recorded on page 12.

```
fcli> setser F20004701426 ↵
Warning: Changing of the System Serial Number
will cause an immediate reboot and a new Fibre
Channel WWN to be created. This command will
fail if the write cache is not in the disable
state and if any I/O is outstanding.
Continue [y/n]y
```

20. Enter **y** to reboot the system.

Although rebooting takes a few minutes, be prepared to interrupt the autoboot process at the IP4700 banner.

---

21. Enter **^V** (**CTRL-V**) *immediately* when the system displays the IP4700 banner.

```
  @@@@@@  @@@@@       @@@   @@@@@@     @@       @@
    @@    @@  @@     @ @@   @@  @@    @  @     @  @
    @@    @@  @@    @  @@        @@   @@  @@   @@  @@
    @@    @@  @@   @   @@       @@    @@  @@   @@  @@
    @@    @@@@@    @@@@@@@     @@    @@  @@   @@  @@
    @@    @@           @@     @@     @  @     @  @
  @@@@@@  @@           @@     @@       @@       @@


Starting SP Components. Please Wait....
```

22. When the Boot Console menu displays, type **2** at the `Enter Number of Your Choice:` field, and then press **<Enter>** to reach the fcli command line.

```
              Boot Console
           1. Perform Factory Initialization
           2. Access FCLI
           3. Recover Administrative State
           4. Recreate System Volumes
           5. Check File System on Volumes
           6. Authorized Service Personnel Only
           Q. Quit Boot Console.
        Enter Number Of Your Choice: 2 ↵

    FCLI Passthru Command Line. Type menu to return to menu interface.
fcli >
```

23. At the `fcli >` prompt, type **setser** and then press **<Enter>**.

```
fcli> setser ↵
Current serial number is: f20004701426
```

24. Verify that you entered the serial number accurately. If the serial number is incorrect, repeat Steps 19 through 23.
25. At the `fcli >` prompt, type **clearlog** and then press **<Enter>**.
26. At the `fcli >` prompt, type **menu** and then press **<Enter>**. The system exits fcli mode and displays the Boot Console menu.

```
fcli> menu ↵
                Boot Console
             1. Perform Factory Initialization
             2. Access FCLI
             3. Recover Administrative State
             4. Recreate System Volumes
             5. Check File System on Volumes
             6. Authorized Service Personnel Only
             Q. Quit Boot Console.
          Enter Number Of Your Choice:
```

Perform the Factory Initialization

27. Perform the Factory Initialization process:

    a. At the `Enter Number of Your Choice:` prompt, type **1** and then press **<Enter>.**

    b. When asked to confirm, type **y** and then press **<Enter>.**

    The initialization process should take 5 minutes or less to complete.

```
      Boot Console
   1. Perform Factory Initialization
   2. Access FCLI
   3. Recover Administrative State
   4. Recreate System Volumes
   5. Check File System on Volumes
   6. Authorized Service Personnel Only
   Q. Quit Boot Console.
Enter Number Of Your Choice: 1 ↵

Are you sure you want to perform Factory Initialization?
All volumes and data will be deleted (y/n): y_
```

28. When the initialization completes, press **<Enter>** to reboot the system.

```
         Removing Raid Groups...
         Creating System Volumes...
Command "setfkey -id 80000002 -q c -n "num-encl"" NOT found
03/16/2001 16:12:31 GMT
fcli>
         Waiting For System Volumes Bind...
         Initializing System Volumes...
         Extracting Web and Help Files...
         Creating Volumes A0 and B0...


               FACTORY INITIALIZATION COMPLETED SUCCESSFULLY


              Hit return to reboot the system ↵
```

Reboot time is approximately 5 minutes. When the system finishes booting, it displays the IP4700 banner and a request to `Press Enter to continue`.

```
Starting SP Components. Please Wait.

  Raid System Started Successfully....
  Volume Manager Started Successfully.
  Root File System Started Successfully...


   @@@@@@  @@@@@       @@@   @@@@@@    @@       @@
     @@    @@  @@     @ @@   @@  @@   @  @     @  @
     @@    @@  @@    @  @@        @@  @@  @@  @@  @@
     @@    @@  @@   @   @@       @@   @@  @@  @@  @@
     @@    @@@@@   @@@@@@@      @@   @@  @@  @@  @@
     @@    @@           @@     @@     @  @     @  @
   @@@@@@  @@           @@     @@      @@       @@


Press Enter to continue...
```

The conversion from an FC4700 to an IP4700 is now complete.

Perform the Site Initialization

Next you must launch the IP4700 Initialization Wizard (sometimes called the *Setup* Wizard). The wizard guides you through the standard IP4700 network initialization.

Before you start, make sure you have gathered the necessary network information and filled out the work sheets in Step 1 of the *IP4700 Quick Start Guide*.

---

29. To start the IP4700 Initialization Wizard via the serial port, press **<Enter>** at the IP4700 banner display.

    The wizard displays a greeting message and asks you to continue.

```
Setup guides you through the network initialization
of your IP4700.

If at any time you wish to abort a step, press q.

  Press Enter to continue..._
```

System Installation

30. To install the new system, follow the instructions in the *IP4700 Quick Start Guide*, the on-line wizard instructions, and the IP4700 Release Notes for your software revision. They will help you ensure that your license keys and other options are installed correctly.

    You may need to update the IP4700 software to the latest release. To determine whether you need to update it and how to receive the latest software, contact your authorized IP4700 service provider.